

Application No. 09/919,891

Reply to Office Action of December 2, 2004

IN THE CLAIMS

Please amend the claims as follows:

Claims 1-34 (Cancelled).

Claim 35 (Previously Presented): An isolated polynucleotide which encodes a protein comprising the amino acid sequence of SEQ ID NO: 2.

Claim 36 (Previously Presented): A vector comprising the isolated polynucleotide of Claim 35.

Claim 37 (Currently Amended): A host cell comprising transformed with the isolated polynucleotide of Claim 35.

Claim 38 (Previously Presented): The host cell of Claim 37, which is a coryneform bacterium.

Claim 39 (Currently Amended): The host cell of Claim 37, ~~wherein said host cell is~~ selected from the group consisting of *Corynebacterium glutamicum*, *Corynebacterium acetoglutamicum*, *Corynebacterium acetoacidophilum*, *Corynebacterium melassecola*, *Corynebacterium thermoaminogenes*, *Brevibacterium flavum*, *Brevibacterium lactofermentum*, and *Brevibacterium divaricatum*.

Claim 40 (Currently Amended): An isolated polynucleotide, which comprises SEQ ID NO: 1, or a fragment of SEQ ID NO: 1 which encodes a polypeptide having homocysteine methyltransferase activity.

Claim 41 (Previously Presented): A vector comprising the isolated polynucleotide of Claim 40.

Claim 42 (Currently Amended): A host cell comprising transformed with the isolated polynucleotide of Claim 40.

Application No. 09/919,891

Reply to Office Action of December 2, 2004

Claim 43 (Previously Presented): The host cell of Claim 42, which is a coryneform bacterium.

Claim 44 (Currently Amended): The host cell of Claim 42, ~~wherein said host cell is~~ selected from the group consisting of *Corynebacterium glutamicum*, *Corynebacterium acetoglutamicum*, *Corynebacterium acetoacidophilum*, *Corynebacterium melassecola*, *Corynebacterium thermoaminogenes*, *Brevibacterium flavum*, *Brevibacterium lactofermentum*, and *Brevibacterium divaricatum*.

Claim 45 (Currently Amended): An isolated polynucleotide, which hybridizes under stringent conditions to a polynucleotide comprising SEQ ID NO: 1 or the complement thereof; wherein said stringent conditions comprise washing in 0.5 X SSC at a temperature of 68°C, and which encodes a protein which has homocysteine methyltransferase activity.

Claim 46 (Previously Presented): A vector comprising the isolated polynucleotide of Claim 45.

Claim 47 (Currently Amended): A host cell ~~comprising~~ transformed with the isolated polynucleotide of Claim 45.

Claim 48 (Previously Presented): The host cell of Claim 47, which is a coryneform bacterium.

Claim 49 (Currently Amended): The host cell of Claim 47, ~~wherein said host cell is~~ selected from the group consisting of *Corynebacterium glutamicum*, *Corynebacterium acetoglutamicum*, *Corynebacterium acetoacidophilum*, *Corynebacterium melassecola*, *Corynebacterium thermoaminogenes*, *Brevibacterium flavum*, *Brevibacterium lactofermentum*, and *Brevibacterium divaricatum*.

Claim 50 (Currently Amended): An isolated polynucleotide which is at least 90% 95% identical to a polynucleotide comprising SEQ ID NO: 1 and

Application No. 09/919,891

Reply to Office Action of December 2, 2004

which encodes a protein having homocysteine methyltransferase activity, or
a fragment of said polynucleotide which encodes a polypeptide having homocysteine
methyltransferase activity.

Claim 51 (Currently Amended): The isolated polynucleotide of Claim 50, which is at least ~~95%~~ 99% identical to the polynucleotide comprising SEQ ID NO: 1.

Claim 52 (Previously Presented): A vector comprising the isolated polynucleotide of Claims 50 or 51.

Claim 53 (Currently Amended): A host cell ~~comprising~~ transformed with the isolated polynucleotide of Claims 50 or 51.

Claim 54 (Previously Presented): The host cell of Claim 53, which is a coryneform bacterium.

Claim 55 (Currently Amended): The host cell of Claim 53, ~~wherein said host cell is~~ selected from the group consisting of *Corynebacterium glutamicum*, *Corynebacterium acetoglutamicum*, *Corynebacterium acetoacidophilum*, *Corynebacterium melassecola*, *Corynebacterium thermoaminogenes*, *Brevibacterium flavum*, *Brevibacterium lactofermentum*, and *Brevibacterium divaricatum*.

Claim 56 (Withdrawn, Currently Amended): A process for producing an ~~L-amine~~ Acid L-amino acid which is L-methionine, comprising:

culturing the host cell of Claim 37 in a medium suitable for producing ~~the L-amine~~ acid L-methionine; and

collecting the ~~L-amine acid~~ L-methionine produced, wherein the isolated polynucleotide encoding SEQ ID NO: 2 is overexpressed in said host cell.

Claim 57 (Cancelled):

Claim 58 (Withdrawn): The process of Claim 56, wherein said host cell is a coryneform bacterium.

Application No. 09/919,891

Reply to Office Action of December 2, 2004

Claim 59 (Withdrawn): The process of Claim 56, wherein the host cell further comprises at least one overexpressed gene selected from the group consisting of the *lysC* gene which codes for a feed back resistant aspartate kinase, the *gap* gene which codes for glycerolaldehyde 3-phosphate dehydrogenase, the *pgk* gene which codes for 3-phosphoglycerate kinase, the *pyc* gene which codes for pyruvate carboxylase, the *tpi* gene which codes for triose phosphate isomerase, the *metA* gene which codes for homoserine O-acetyltransferase, the *metB* gene which codes for cystathionine gamma-synthase, the *aecD* gene which codes for cystathionine gamma-lyase, the *glyA* gene which codes for serine hydroxymethyltransferase, and the *metY* gene which codes for O-acetylhomoserine-sulfhydrylase.

Claim 60 (Withdrawn): The process of Claim 56, wherein the host cell comprises expression of at least one gene whose expression is reduced relative to expression in a wildtype host cell, wherein the at least one gene is selected from the group consisting of the *thrB* gene which codes for homoserine kinase, the *ilvA* gene which codes for threonine dehydratase, the *thrC* gene which codes for threonine synthase, the *ddh* gene which codes for meso-diaminopimelate D-dehydrogenase, the *pck* gene which codes for phosphoenol pyruvate carboxykinase, the *pgi* gene which codes for glucose 6-phosphate isomerase, and the *poxB* gene which codes for pyruvate oxidase.

Claim 61 (Withdrawn, Currently Amended): The process of Claim 56, further comprising:

~~concentrating the L-amino acid in the medium;~~

removing an amount of 0 to 100 wt. % of the biomass formed during the culturing from the medium; and optionally

concentrating the resulting medium containing the L-methionine, and optionally, drying the concentrated medium L-amino acid collected.

Claim 62 (Withdrawn, Currently Amended): A process for producing an L-amino acid which is L-methionine, comprising

culturing the host cell of Claim 42 in a medium suitable for producing the L-amino acid L-methionine; and

Application No. 09/919,891

Reply to Office Action of December 2, 2004

collecting the ~~L-amine acid~~ L-methionine produced, wherein the isolated polynucleotide is overexpressed in said host cell.

Claim 63 (Cancelled):

Claim 64 (Withdrawn): The process of Claim 62, wherein said host cell is a coryneform bacterium.

Claim 65 (Withdrawn): The process of Claim 62, wherein the host cell further comprises at least one overexpressed gene selected from the group consisting of the *lysC* gene which codes for a feed back resistant aspartate kinase, the *gap* gene which codes for glycerolaldehyde 3-phosphate dehydrogenase, the *pgk* gene which codes for 3-phosphoglycerate kinase, the *pyc* gene which codes for pyruvate carboxylase, the *tpi* gene which codes for triose phosphate isomerase, the *metA* gene which codes for homoserine O-acetyltransferase, the *metB* gene which codes for cystathionine gamma-synthase, the *aecD* gene which codes for cystathionine gamma-lyase, the *glyA* gene which codes for serine hydroxymethyltransferase, and the *metY* gene which codes for O-acetylhomoserine-sulfhydrylase.

Claim 66 (Withdrawn, Currently Amended): The process of Claim 62, wherein the host cell comprises ~~expression of~~ at least one gene whose expression is reduced relative to expression in a wildtype host cell, wherein the at least one gene is selected from the group consisting of the *thrB* gene which codes for homoserine kinase, the *ihvA* gene which codes for threonine dehydratase, the *thrC* gene which codes for threonine synthase, the *ddh* gene which codes for meso-diaminopimelate D-dehydrogenase, the *pck* gene which codes for phosphoenol pyruvate carboxykinase, the *pgi* gene which codes for glucose 6-phosphate isomerase, and the *poxB* gene which codes for pyruvate oxidase.

Claim 67 (Withdrawn, Currently Amended): The process of Claim 62, further comprising: ~~concentrating the L-amine acid in the medium;~~

removing an amount of 0 to 100 wt.% of the biomass formed during the culturing from the medium;

concentrating the resulting medium containing the L-methionine; and optionally

Application No. 09/919,891

Reply to Office Action of December 2, 2004

drying the concentrated medium ~~L-amine acid~~ collected.

Claim 68 (Withdrawn, Currently Amended): A process for producing an L-amino acid which is L-methionine, comprising

culturing the host cell of Claim 47 in a medium suitable for producing the ~~L-amine acid~~ L-methionine; and

collecting the ~~L-amine acid~~ L-methionine produced, wherein the isolated polynucleotide is overexpressed in said host cell.

Claim 69 (Cancelled):

Claim 70 (Withdrawn): The process of Claim 68, wherein said host cell is a coryneform bacterium.

Claim 71 (Withdrawn): The process of Claim 68, wherein the host cell further comprises at least one overexpressed gene selected from the group consisting of the *lysC* gene which codes for a feed back resistant aspartate kinase, the *gap* gene which codes for glyceraldehyde 3-phosphate dehydrogenase, the *pgk* gene which codes for 3-phosphoglycerate kinase, the *pyc* gene which codes for pyruvate carboxylase, the *tpi* gene which codes for triose phosphate isomerase, the *metA* gene which codes for homoserine O-acetyltransferase, the *metB* gene which codes for cystathionine gamma-synthase, the *aecD* gene which codes for cystathionine gamma-lyase, the *glyA* gene which codes for serine hydroxymethyltransferase, and the *metY* gene which codes for O-acetylhomoserine-sulphydrylase.

Claim 72 (Withdrawn): The process of Claim 68, wherein the host cell comprises expression of at least one gene whose expression is reduced relative to expression in a wildtype host cell, wherein the at least one gene is selected from the group consisting of the *thrB* gene which codes for homoserine kinase, the *ilvA* gene which codes for threonine dehydratase, the *thrC* gene which codes for threonine synthase, the *ddh* gene which codes for meso-diaminopimelate D-dehydrogenase, the *pck* gene which codes for phosphoenol pyruvate carboxykinase, the *pgi* gene which codes for glucose 6-phosphate isomerase, and the *poxB* gene which codes for pyruvate oxidase.

Application No. 09/919,891

Reply to Office Action of December 2, 2004

Claim 73 (Withdrawn, Currently Amended): The process of Claim 68, further comprising:

~~concentrating the L-amino acid in the medium;~~

removing an amount of 0 to 100 wt.% of the biomass formed during the culturing from the medium;

concentrating the resulting medium containing the L-methionine; and optionally

drying the concentrated medium L-amino acid collected.

Claim 74 (Withdrawn, Currently Amended): A process for producing an L-amino acid which is L-methionine, comprising

culturing the host cell of Claim 53 in a medium suitable for producing ~~the L-amino acid~~ L-methionine; and

collecting the ~~L-amino acid~~ L-methionine produced, wherein the isolated polynucleotide is overexpressed in said host cell.

Claim 75 (Cancelled):

Claim 76 (Withdrawn): The process of Claim 74, wherein said host cell is a coryneform bacterium.

Claim 77 (Withdrawn): The process of Claim 74, wherein the host cell further comprises at least one overexpressed gene selected from the group consisting of the *lysC* gene which codes for a feed back resistant aspartate kinase, the *gap* gene which codes for glycerolaldehyde 3-phosphate dehydrogenase, the *pgk* gene which codes for 3-phosphoglycerate kinase, the *pyc* gene which codes for pyruvate carboxylase, the *tpi* gene which codes for triose phosphate isomerase, the *metA* gene which codes for homoserine O-acetyltransferase, the *metB* gene which codes for cystathionine gamma-synthase, the *aecD* gene which codes for cystathionine gamma-lyase, the *glyA* gene which codes for serine hydroxymethyltransferase, and the *metY* gene which codes for O-acetylhomoserine-sulfhydrylase.

Application No. 09/919,891

Reply to Office Action of December 2, 2004

Claim 78 (Withdrawn, Currently Amended): The process of Claim 74, wherein the ~~host~~ cell comprises ~~expression of~~ at least one gene whose expression is reduced relative to expression in a wildtype host cell, wherein the at least one gene is selected from the group consisting of the *thrB* gene which codes for homoserine kinase, the *ilvA* gene which codes for threonine dehydratase, the *thrC* gene which codes for threonine synthase, the *ddh* gene which codes for meso-diaminopimelate D-dehydrogenase, the *pck* gene which codes for phosphoenol pyruvate carboxykinase, the *pgi* gene which codes for glucose 6-phosphate isomerase, and the *poxB* gene which codes for pyruvate oxidase.

Claim 79 (Withdrawn, Currently Amended): The process of Claim 74, further comprising:

~~concentrating the L-amino acid in the medium;~~

removing an amount of 0 to 100 wt.% of the biomass formed during the culturing from the medium;

concentrating the resulting medium containing the L-methionine; and optionally

drying the concentrated medium L-amino acid collected.

Claim 80 (Previously Presented): *Escherichia coli* strain DSM 14354.

Claim 81 (Currently Amended): A polynucleotide consisting of at least 100 consecutive nucleotides of SEQ ID NO: 1, which acts as a probe or primer.

Claim 82 (New): The method of claim 68, wherein said polynucleotide is overexpressed by increasing its copy number in said host cell.